

Application No. 10/687652
Amendment dated 22 August 2005
Reply to Office Action of 20 May 2005

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REMARKS

Claims 1-3, 10-11, 14-16, 18, 20-22, 24-25, and 27-37 are pending after this amendment. The Applicant respectfully submits that these claims patentably distinguish the prior art of record and are in condition for allowance.

As understood by the Applicant, U.S. Patent No. 5,998,066 (hereinafter "Block") discloses a method of producing a gray scale mask using an inorganic chalcogenide glass, such as selenium germanium (Se-Ge), coated with a thin layer of silver (Ag). As shown in Figures 1-6 and explained in the accompanying description at col. 6, ln. 24 - col. 7, ln. 36, a Se-Ge film (102) is applied to a transparent substrate (100) and then a film of Ag (104) is applied atop the Se-Ge. The Ag layer is then imagewise irradiated with an electron beam. In imaged areas, the electron beam writing causes the Ag to diffuse into the Se-Ge layer forming a resultant Ag-Se-Ge material (see Figure 4 and col. 6, lns. 56-59). The resultant Ag-Se-Ge material has a different solubility in alkaline solutions, from the precursor layers. The non-irradiated areas may be removed by etching the non-diffused silver in an acid solution, followed by removing the underlying Se-Ge film in an alkaline solution. The Ag-Se-Ge material remains behind.

As understood by the Applicant, Block does not disclose or suggest a second inorganic material alloyable with a first inorganic material to form a low optical absorbing resultant alloy. Nor does Block disclose first and second layers of inorganic material that together have high optical absorption characteristics. As understood by the Applicant, Block does not disclose or suggest a second inorganic material that is alloyable with a first inorganic material to form a resultant alloy at a phase transition temperature below melting points of each of the first and second inorganic materials as claimed in claims 1 and 10. Block does not disclose or suggest an exposed area comprising an alloy of first and second inorganic materials, the exposed area having significantly greater transmissivity of radiation of a particular wavelength than the unexposed area. The Applicant submits that independent claims 1 and 10 are patentable over Block for at least these reasons. The remaining claims, 2-

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3, 11, 14-16, 18, 20-22, 24-25, and 27-37 are dependent upon either claim 1 or claim 10, whether directly or indirectly, and thus are also patentable over Block.

As understood by the Applicant, U.S. Patent No. 4,082,861 (hereinafter "Izu") teaches that "substantially opaque" film 11 (col. 13, ln 57) is exposed causing dispersion to change film 11 to a discontinuous film having openings 18 and deformed material 19 (col. 13, ln 38). The "deformed material" 19 remains "substantially opaque" (col. 13, ln 58) whereas light can pass through openings 18 (col. 13, ln 44). When the openings 18 are increased, the transmissivity is increased (col. 14, ln 26-35) because radiation can pass through the openings 18.

Izu defines the terms "dispersion" and "disperse" to mean "the changing of the solid film of material to the discontinuous film comprising openings and deformed material by surface tension of the material while in the substantially fluid state." (col. 2, lines 40-44).

As understood by the Applicant, Izu neither discloses nor suggests that exposure would result in the formation of an alloy. Izu does not disclose a second inorganic material alloyable with a first inorganic material at a phase transition temperature below individual melting points of the first and second inorganic materials. Nor does Izu disclose or suggest an alloy of first and second inorganic materials that is substantially transparent.

The Applicant submits that in view of the above, independent claims 1 and 10 patentably distinguish Izu. The remaining claims, 2-3, 11, 14-16, 18, 20-22, 24-25, and 27-37, are dependent upon either claim 1 or claim 10, whether directly or indirectly, and thus are also patentable over Izu.

Conclusions

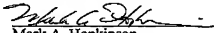
In view of the amendments and comments presented above, the Applicant submits that the claims of this application patentably distinguish both Block and Izu and that this application is now in condition for allowance. The Applicant respectfully requests

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reconsideration and allowance of this application in light of the foregoing amendments and comments.

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